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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,149	10/15/2003	Paul M. Crafton	C152 1131.1	6178
7590	07/23/2004		EXAMINER	
WOMBLE CARLYLE SANDRIDGE & RICE			RINEHART, KENNETH	
P.O. Box 7037			ART UNIT	PAPER NUMBER
Atlanta, GA 30357-0037			3749	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/686,149	CRAFTON ET AL.
	Examiner Kenneth B Rinehart	Art Unit 3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 October 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-29 and 31-36 is/are rejected.
- 7) Claim(s) 30 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 October 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/10/03.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed 11/3/2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement filed 11/03/2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second circulating fluid bed combustor, refluxing, diverting a third portion of the fly ash to the third combustion unit occurs before completion of combusting of the second portion of the fly ash in the second combustion unit must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended.

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The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because of the following informalities: On pages 9, lines 13, 16, page 10, line 3, page 11, lines 6-8, page 12 ,lines 4-5, page 12, line 9 reference is made to 110, 111, and 112 which are not illustrated on the drawings. Additionally reference is made to a figure 5 (page 25, line 5), however there no figure 5 in the disclosure, page 25, line 6 refers to injection line 106 which is not illustrated.

Appropriate correction is required.

### *Claim Objections*

Claim 19 is objected to because of the following informalities: Claim 19, line 8 refers to "the combustion unit" as there are two combustion units in the claim the applicant should identify the appropriate one with the term first or second. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Borowy.

Borowy shows diverting a first batch of fly ash to a first processing unit (17 under 18, fig. 1), processing the first batch of fly ash in the first processing unit (21, fig. 1); diverting a second batch of fly ash to a second processing unit (17 to left of 18, fig. 1); processing the second batch of fly ash in the second processing unit (31, fig. 1); and collecting the first and second processed batches of fly ash (to storage, fig. 1), collecting the fly ash prior to diverting the first batch of fly ash (10, fig. 1), comprising diverting a third batch of fly ash to the first processing unit before processing of the second batch of fly ash is completed (fig. 1, col. 2, lines 47-50), processing the first batch of fly ash comprises combusting the fly ash (24 Boiler, fig. 1), diverting the first and second batches of fly ash is substantially continuous (fig. 1, col. 2, lines 47-50),

Claims 1-5, 6-10, 12, 13, 14, 16, 17, 19, 20-26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP358085011. JP358085011 shows a fly ash feed source (22, fig. 2), a first combustion unit in flow communication with said fly ash feed source (8, fig. 2), a second combustion unit in flow communication with said fly ash feed source (9, fig. 2); and collection vessel in flow communication with said first combustion unit and said second combustion unit (5, fig. 2), said fly ash feed source comprises a feed vessel (22, fig. 1), a feed line in flow communication with said feed vessel (below 22, fig. 2), a diverter in flow communication with

said fly ash feed source, said first combustion unit and said second combustion unit (fig. 23, fig. 2), a collection line in flow communication with said first combustion unit, said second combustion unit and said collection vessel (18, fig. 2), said first combustion unit comprises a circulating fluid bed combustor (fig. 2), wherein said circulating fluid bed combustor comprises a separator having an inlet in flow communication with an outlet of a reactor (12, fig. 2), an accumulator in flow communication an outlet of said separator and with an inlet of said reactor (14, fig. 2), said circulating fluid bed combustor comprises a fluidized bed disposed in said reactor and a heat source operably connected to said reactor (6, 24, fig. 2), feeding fly ash to a diverter (23, fig. 2), diverting a first portion of the fly ash to a first combustion unit (23, fig. 2), combusting the first portion of fly ash in the combustion unit thereby reducing the carbon content of the fly ash (fig. 2), diverting a second portion of the fly ash to a second combustion unit (3, fig. 2); and combusting the second portion of the fly ash in the combustion unit, thereby reducing the carbon content of the second portion of fly ash (fig. 2), collecting combusted fly ash from the first and the second combustion units (5, fig. 2), collecting the fly ash prior to diverting a first portion of the fly ash to the first combustion unit (22, fig. 2), collecting the fly ash prior to diverting a second portion of the fly ash to the second combustion unit (12, 14, fig. 2), combustion of the first portion of the fly ash comprises feeding the fly ash into a fluidized bed (6, fig. 2) combusting the first portion of the fly ash comprises refluxing at least a portion of the combusted fly ash through the fluidized bed (16, fig. 2), combusting the first portion of fly ash comprises reducing the carbon content of the fly ash to up to about 2% by weight (The apparatus is presently capable of performing this function. ) feeding fly ash to the diverter is substantially continuous (fig. 2), a feed vessel having an inlet in flow communication with a fly ash supply

(22, fig. 2); a diverter in flow communication with an outlet of said feed vessel (23, fig. 2), a first combustion unit in flow communication with said diverter (8, fig. 2); and a second combustion unit in flow communication with said diverter (9, fig. 2), a collection unit in flow communication with said first combustion unit and said second combustion unit (5, fig. 2), said first combustion unit comprises a circulating fluid bed combustor (fig. 2), said second combustion unit comprises a second circulating fluid bed combustor (fig. 2), said second combustion unit comprises a second circulating fluid bed reactor (9, fig. 2).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Bachik. Bachik shows a fly ash feed source (8, fig. 3), a first combustion unit in flow communication with said fly ash feed source (7, fig. 3), a second combustion unit in flow communication with said fly ash feed source (10, fig. 3); and collection vessel in flow communication with said first combustion unit and said second combustion unit (18, fig. 3), said fly ash feed source comprises a feed vessel (8, fig. 3), a feed line in flow communication with said feed vessel (21, fig. 3).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 5, 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al in view of Kujawa et al. Schaub et al discloses a fly ash feed source (2, fig.), a first combustion unit in flow communication with said fly ash feed source (1, fig.), a second combustion unit in flow communication with said fly ash feed source (19, fig.); and ... in flow communication with said first combustion unit and said second combustion unit (fig.), a collection line in flow communication with said first combustion unit, said second combustion unit and said ... (22, fig.), said first combustion unit comprises a circulating fluid bed combustor (1, fig. ), said circulating fluid bed combustor comprises a separator having an inlet in flow communication with an outlet of a reactor (10, fig. 1), accumulator in flow communication an outlet of said separator and with an inlet of said reactor (12, fig.), said circulating fluid bed combustor comprises a fluidized bed disposed in said reactor (1, fig.) and a heat source operably connected to said reactor (col. 2, lines 53-56). Schaub et al discloses applicant's invention substantially as claimed with the exception of collection vessel. Kujawa et al teaches collection vessel (30, fig. 1) for the purpose of disposing of the slag. It would have been obvious to one of ordinary skill in the art to modify Schauub et al by including collection vessel as taught by Kujawa et al for the purpose of disposing of the slag so that the material can be transported to another location for use.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bachik in view of Perrone. Bachik discloses a fly ash feed source (8, fig. 3), a first combustion unit in flow communication with said fly ash feed source (7, fig. 3), a second combustion unit in flow communication with said fly ash feed source (10, fig. 3); and collection vessel in flow communication with said first combustion unit and said second combustion unit (18, fig. 3), said

fly ash feed source comprises a feed vessel (8, fig. 3), a feed line in flow communication with said feed vessel (21, fig. 3). Bachik discloses applicant's invention substantially as claimed with the exception of a controller operably connected to said fly ash feed source, wherein said controller comprises a timer. Perrone teaches a controller operably connected to said fly ash feed source, wherein said controller comprises a timer (col. 2, lines 61-67) for the purpose of improving the efficiency of the system. It would have been obvious to one of ordinary skill in the art to modify Bachik by including a controller operably connected to said fly ash feed source, wherein said controller comprises a timer as taught by Perrone for the purpose of improving the efficiency of the system.

Claims 15, 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP358085011 in view of Perrone. JP358085011 discloses a feed vessel having an inlet in flow communication with a fly ash supply (22, fig. 2); a diverter in flow communication with an outlet of said feed vessel (23, fig. 2), a first combustion unit in flow communication with said diverter (8, fig. 2); and a second combustion unit in flow communication with said diverter (9, fig. 2), feeding fly ash to a diverter (23, fig. 2), diverting a first portion of the fly ash to a first combustion unit (23, fig. 2), combusting the first portion of fly ash in the combustion unit thereby reducing the carbon content of the fly ash (fig. 2), diverting a second portion of the fly ash to a second combustion unit (3, fig. 2); and combusting the second portion of the fly ash in the combustion unit, thereby reducing the carbon content of the second portion of fly ash (fig. 2). JP358085011 discloses applicant's invention substantially as claimed with the exception of selecting the first portion of the fly ash prior to diverting the first portion to the ..., diverting the first portion of the fly ash comprises diverting fly ash to the ... for a pre-determined time period

to obtain the first portion of the fly ash, diverting a third portion of the fly ash to the ... after ... the first portion of the fly ash, a controller operably connected to said diverter, wherein said controller comprises a timer. Perrone teaches selecting the first portion of the fly ash prior to diverting the first portion to the ... (fig. 1), diverting the first portion of the fly ash comprises diverting fly ash to the ... for a pre-determined time period to obtain the first portion of the fly ash, a controller operably connected to said diverter, wherein said controller comprises a timer (fig. 1, fig. 2, col. 2, lines 61-67), diverting a third portion of the fly ash to the ... after ... the first portion of the fly ash (fig. 1) for the purpose of providing for a more efficient system that reduces gate valve deterioration. It would have been obvious to one of ordinary skill in the art to modify JP358085011 by including selecting the first portion of the fly ash prior to diverting the first portion to the ..., diverting the first portion of the fly ash comprises diverting fly ash to the ... for a pre-determined time period to obtain the first portion of the fly ash, diverting a third portion of the fly ash to the ... after ... the first portion of the fly ash, a controller operably connected to said diverter, wherein said controller comprises a timer as taught by Perrone for the purpose of providing for a more efficient system that reduces gate valve deterioration and thus reduces maintenance costs.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaub et al in view of Kujawa et al as applied to claim 11 above, and further in view of Davies. Schaub et al in view of Kujawa et al discloses applicant's invention substantially as claimed with the exception of said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof. Davies teaches said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof (col. 6, lines 38-45) for the purpose of

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improving heat transfer. It would have been obvious to one of ordinary skill in the art to modify Schaub et al by including said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof as taught by Davies for the purpose of improving heat transfer so that the incinerator operates more efficiently.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP358085011 in view of Davies. JP358085011 discloses a feed vessel having an inlet in flow communication with a fly ash supply (22, fig. 2); a diverter in flow communication with an outlet of said feed vessel (23, fig. 2), a first combustion unit in flow communication with said diverter (8, fig. 2); and a second combustion unit in flow communication with said diverter (9, fig. 2), said first combustion unit comprises a circulating fluid bed combustor (8, fig. 2). JP358085011 discloses applicant's invention substantially as claimed with the exception of said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof. Davies teaches said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof (col. 6, lines 38-45) for the purpose of improving heat transfer. It would have been obvious to one of ordinary skill in the art to modify JP358085011 by including said fluidized bed comprises particles selected from sand, alumina, silica, inert oxides and combinations thereof as taught by Davies for the purpose of improving heat transfer so that the incinerator operates more efficiently.

***Allowable Subject Matter***

Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to ash in general: Ramme (5992336).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B Rinehart whose telephone number is 703-308-1722. The examiner can normally be reached on 7:30 -4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 703-308-1935. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KBR



KENNETH RINEHART  
PRIMARY EXAMINER